Loup Power District
Creston Ridge Wind Farm

Nebraska Wind/Solar Conference
November 14, 2017

Early Discussions

- Talks with Bluestem Energy Solutions
  - Early 2014
  - Idea for a wind farm
  - Bluestem - redeveloped the Springview wind turbines for NPPD
- Ability within NPPD wholesale rate structure/contract to take 3% of peak demand from a behind the meter renewable resource (has since been increased to 10%)
- One NPPD wholesale customer had moved forward
- District Board skeptical at first

PPA Development

- Development Agreement with Bluestem
  - No commitment from District
  - Paid certain basic development costs if project did not proceed
- After investigation, Bluestem offered PPA
  - Pricing fixed for 25 years
  - Competitive with NPPD's wholesale pricing
  - Economics are dependent upon output coinciding with District's peak demand times and NPPD wholesale price escalation

Additional Agreements

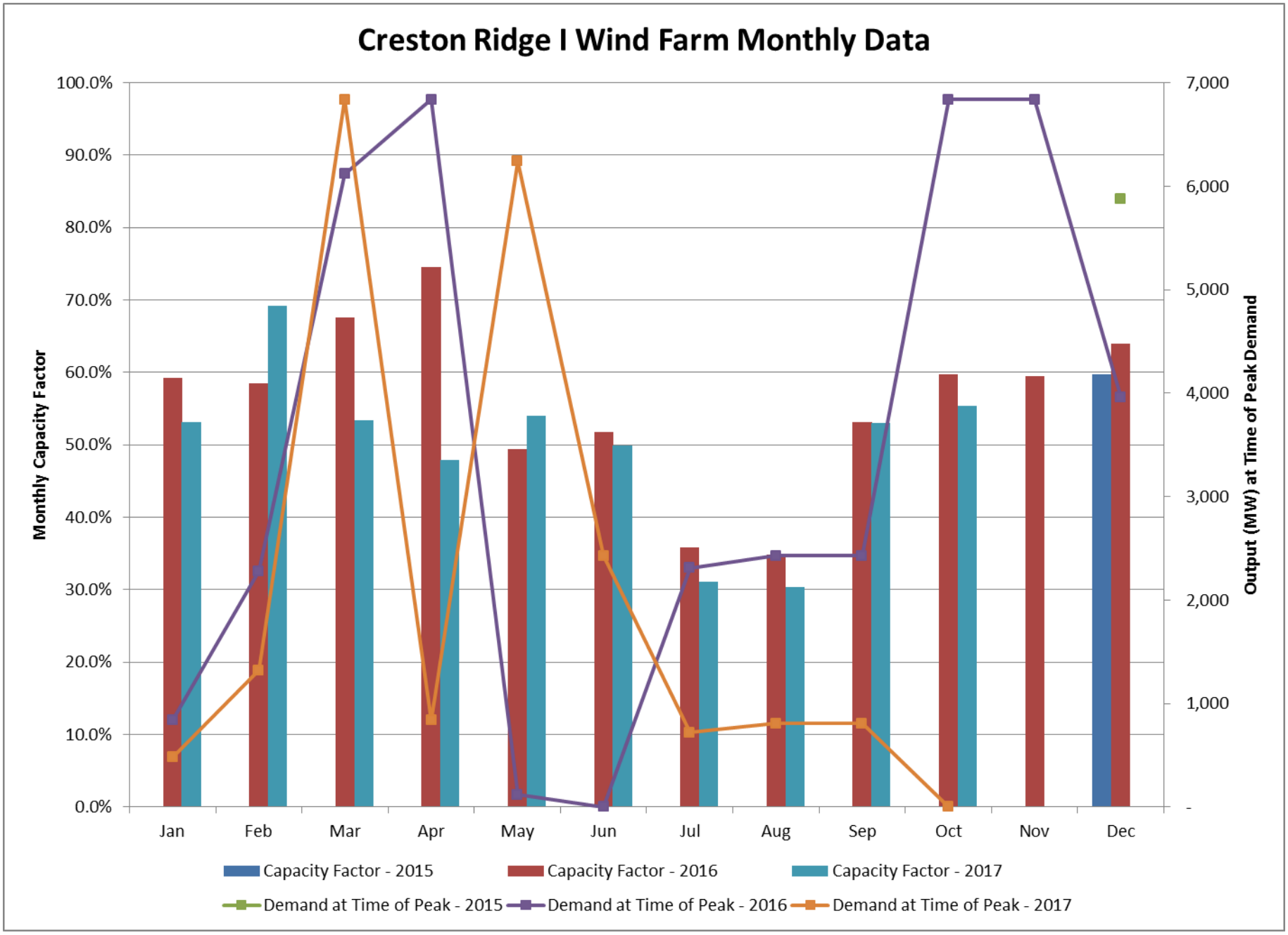
- Negotiated both a PPA and a GIA
  - Entered into in early 2015
  - No additional costs to the District
  - Bluestem responsible for interconnect with District facilities at the 34.5kV level
  - Take all power generated from wind farm at the price included in agreement. Only energy pricing

Interconnection

- Interconnected with District's 34.5kV system
  - Needed to find location where generation would not feed back into NPPD transmission system.
  - Criteria required by NPPD and the SPP.
  - Located near Creston, NE, approximately 15-20 miles north of Columbus.
  - Was not the number one site, but met criteria needs

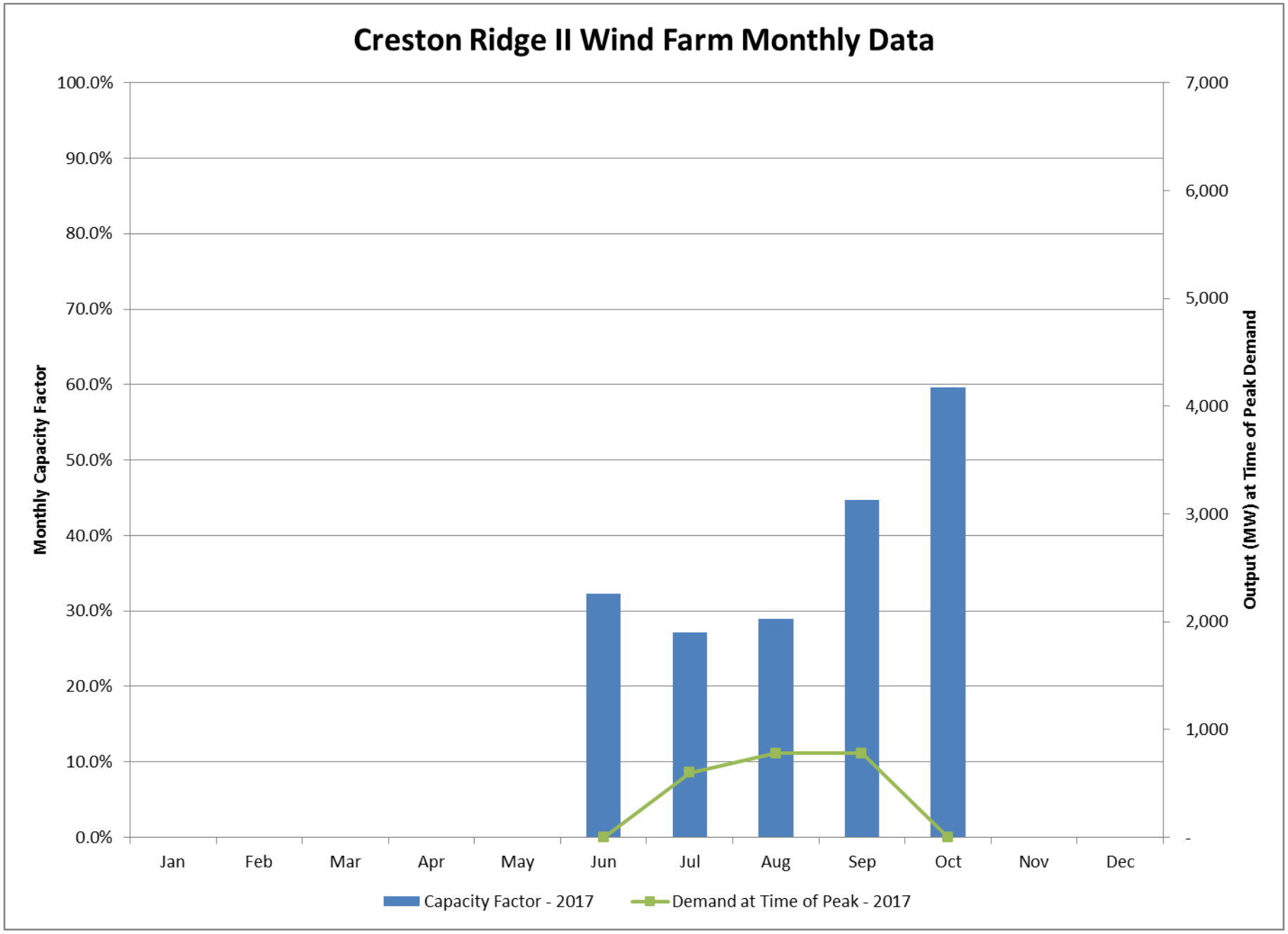
Creston Ridge I Wind Farm

- Phase 1
  - 4 turbines and towers
  - Each rated at 1.7MW each/total of 6.8 MW
  - Commercial operation = December 5, 2015


Creston Ridge I Wind Farm Monthly Data
Monthly Capacity Factor
Output (MW) at Time of Peak Demand
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Capacity Factor - 2015
Capacity Factor - 2016
Capacity Factor - 2017
Demand at Time of Peak - 2015
Demand at Time of Peak - 2016
Demand at Time of Peak - 2017

Creston Ridge II Wind Farm

- Phase 2
  - 3 turbines and towers
  - Each rated at 2.3MW each/total of 6.9 MW
  - Commercial operation = June 21, 2017


Creston Ridge II Wind Farm Monthly Data
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
Monthly Capacity Factor
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
Output (MW) at Time of Peak Demand
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Capacity Factor - 2017
Demand at Time of Peak - 2017

Questions???